

cannot fight off the pathogen. Researchers at Harvard University and USDA's Agricultural Research Center are working on characterizing the complex genetic system that allows legumes such as soybeans, garden peas, and beans to help fix nitrogen in the soil. Enhancing the symbiosis between a plant and its neighboring microorganisms could reduce the need for fertilizers.

New techniques in gene mapping are making plant mapping easier. To construct genetic maps of forest trees, North Carolina State University's Forest Biotechnology Research Consortium is using a technique called random amplified polymorphic DNA (RAPD) developed by DuPont. The RAPD technology allows researchers to duplicate very short pieces of DNA from a loblolly pine, then compare genetic variations between these bits and other sections. Once hundreds of these genetic variations are plotted and their associations with other sections of DNA determined, a genetic map emerges that allows scientists to determine where genes fall in relation to markers. Ronald Sederoff, a professor of forestry and genetics, said that only a year ago mapping a loblolly pine would have taken four years and \$1 million. This spring, researchers mapped it using RAPD in 60 days, at a fraction of the cost. Another technique called amplified fragment length polymorphic is also on the horizon, according to Miksche. It's much like RAPD, but even faster and more discriminating.

Efforts to map plant genomes have been aided by the agricultural industry, but their findings are often private, Miksche said. The controversy that has sprung from one of their efforts, the famous "Flavor Saver" tomato, however, portends future public debate over the safety and efficacy of genetically altered food. Miksche said he is ready for "a good public discussion," but hopes that it is "waged on scientific rather than emotional grounds."

A Healthy Peace in the Middle East

More than 50 senior scientists from academic institutions and government agencies from nine Middle East countries (Bahrain, Egypt, Israel, Jordan, Kuwait, Lebanon, Saudi Arabia, the United Arab Emirates, and Yemen) and from the occupied territories on the West Bank and the Gaza Strip, along with U.S. and Canadian scientists, met for the first time to address environmental health risks in the Middle East. The scientists gathered in Cairo September 6-11 to attend the Environmental Health Conference for the Middle East Region. The conference was hosted by Cairo



Middle East meets West. Participants of the conference represented Bahrain, Egypt, Gaza Strip, Israel, Jordan, Kuwait, Saudi Arabia, and the United States.

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The purpose of the conference was to identify and seek possible interventions for environmental health risks that are unique to the individual countries in the Middle East or that present significantly elevated threats to occupational or environmental health. Misuse of pesticides and other agricultural chemicals, disposal of solid and chemical wastes, urban air pollution, water quality, environmental impacts of industrialization, and the adverse effects of wind-blown dusts and intense heat were identified as posing serious public health problems in the region. Several participants noted that infectious diseases associated with poor sanitation, food contamination, and overcrowding remain major causes of morbidity and mortality in many areas of the Middle East.

Scientists from the Middle East expressed concern and frustration about the fact that the dramatic environmental impacts of population changes and agricultural, technological, and industrial advances in the region have been identified and characterized by scientists but are apparently unrecognized by government officials and the general public. In response to this concern, participants proposed the formation of a committee of scientists who will meet regularly to address specific environmental and occupational health risks that exist in the Middle East

and to develop strategies to reduce these risks.

The scientists stressed that the committee members would have the expertise to design programs that protect human health but that would not threaten the processes of economic and industrial development or the social, cultural, and religious values of the nations in the region. Because the committee includes wide regional representation, environmental concerns that affect several countries can be resolved by programs that cross national borders.

The conference took place just as the intention of the Palestinian Liberation Organization and Israel to seek a peace accord was announced. As news of the potential agreement reached Cairo, it gave added impetus to the creation of the regional committee. As one participant pointed out on the closing day of the conference, "We all come from developing countries but we are not from poor countries. We each have an obligation as scientists to convince our governmental leaders that our effort is an important part of the peace process and must be maintained as a regional effort."

Browner and Babbitt Meet the Press

EPA Administrator Carol Browner and Interior Secretary Bruce Babbitt faced tough questions on the Superfund law, the Endangered Species Act, and other issues at a meeting of environmental journalists held October 22-24.